

## DATA SHEET #NFC430

# UNIVERSAL CG-6% Alcohol Resistant AFFF

### Description

Universal CG-6% is a specially formulated Alcohol Resistant Aqueous Film Forming (AR-AFFF) foam concentrate used at 6% to extinguish fires in hydrocarbon or polar solvent fuels. Its performance is recognized by U.S. Coast Guard approval for shipboard fire protection systems.

Universal CG-6% is suitable for use with foam compatible dry powder extinguishing agents.

Universal CG-6% contains a biosynthesized polymer designed to fulfill two functions. The first is to form a protective membrane between the fuel and the foam as it contacts the water miscible fuel, making extinguishment possible. The second function is to make the foam more stable and heat-resistant, resulting in better burnback resistance and sealability compared to conventional AFFF's.

### Applications

Universal CG-6% is used in fire suppression systems and manual applications to fight the broadest range of Class B fires. Typical applications include hydrocarbon carriers, chemical carriers, RoRo vessels, firefighting tugs, etc.

### Typical Physical Properties

Appearance .....	Straw Yellow Viscous Liquid
Specific Gravity @ 77°F (25°C) .....	1.02
pH .....	8.0
Viscosity .....	3300 cps*
Minimum usable temperature .....	35°F (2°C)
Maximum usable temperature .....	120°F (49°C)

\* Brookfield #4 Spindle @ 60 rpm. Viscosity measured under different shear conditions will be different because of pseudoplastic rheology of this non-Newtonian product.

### Approvals and Listings

- U.L. Listed
- U.S. Coast Guard Approved

Universal CG-6% has successfully passed U.L. 162, 7th Edition test criteria for use at 6% concentration on hydrocarbons and polar solvents using both fresh and sea water. The approval includes application through a variety of proportioning and foam-making devices. Consult National

Foam for a complete list of these devices.

Universal CG-6% has been awarded U.S. Coast Guard Certificate of Approval 162.033/27/1 for use at 6% concentration on hydrocarbons and polar solvents.

### Storage and Handling

Universal CG-6% is ideally stored in its original shipping container or in tanks or other containers which have been designed for such foam storage. Recommended construction materials are stainless steel (Type 304L or 316), high density cross-linked polyethylene, or reinforced fiberglass polyester (isophthalic polyester resin) with a vinyl ester resin internal layer coating (50-100 mils).

Foam concentrates are subject to evaporation which accelerates when the product is exposed to air. Storage tanks should be sealed and fitted with a pressure vacuum vent to prevent free exchange of air. The recommended storage environment is within the UL-Listed temperature range of 35°F to 120°F (2°C to 49°C).

It is recommended that Universal CG-6% not be mixed with any other type of foam concentrate in long-term storage. Such mixing could lead to chemical changes in the product and a possible reduction in or loss of its firefighting capability. Most expanded foams are compatible for side by-side application during an incident.

### Shelf Life, Inspection and Testing

The shelf life of any foam concentrate is maximized by proper storage conditions and maintenance. Factors affecting shelf life are wide temperature changes, extreme high or low temperatures, evaporation, dilution, and contamination by foreign materials. Properly stored National Foam AR-AFFF foam concentrates have been tested and shown no significant loss of firefighting performance, even after 15 years.

Annual testing of all firefighting foams is recommended by the National Fire Protection Association (NFPA). National Foam provides a Technical Service Program to conduct such tests. Contact your National Foam representative for details.

**Typical U.S. Coast Guard Approved  
Cargo Deck Protection System Application Rates**

Fuel Group	Specific Test Fuel	Proportioning %	Application Rate gpm/ft <sup>2</sup> (1/m/M <sup>2</sup> )
ALCOHOLS .....	Isopropyl Alcohol .....	6 .....	0.24 (9.8)
KETONES .....	Acetone .....	6 .....	0.24 (9.8)
MTBE .....	Methyl Tertiary Butyl Ether .....	6 .....	0.24 (9.8)
ESTERS .....	Normal Butyl Acetate .....	6 .....	0.16 (6.5)
HYDROCARBONS .....	Gasoline .....	6 .....	0.16 (6.5)
ETHERS .....	Isopropyl Ether .....	6 .....	0.24 (9.8)
ALDEHYDES .....	Propionaldehyde .....	6 .....	0.35 (14.3)
ACIDS .....	Acetic Acid .....	6 .....	0.24 (9.8)
AMINES .....	Ethylene Diamine .....	6 .....	0.24 (9.8)

Refer to National Foam Design Manual AI3-05-004 for complete details.

**Environmental and Toxicological Information**

Universal CG-6% is biodegradable. However, as with any substance, care should be taken to prevent discharge from entering ground water surface water, or storm drains. With advance notice, Universal CG-6% can be treated by local biological sewage treatment systems. Since facilities vary widely by location, disposal should be made in accordance with federal, state and local regulations.

The Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) of Universal CG-6% is:

BOD <sub>5</sub>	(Concentrate)	52,600 mg/kg
COD		157,000 mg/kg

Results of tests for acute oral toxicity and primary skin irritation have proved negative. Repeated skin contact will remove oils from the skin and cause dryness. Universal CG-6% is a primary eye irritant, and contact with the eyes should be avoided. Users are advised to wear protective equipment. If Universal CG-6% enters the eyes, flush them well with water and seek immediate medical attention. For further details, see the Universal CG-6% Material Safety Data Sheet.

**Ordering Information**

CONTAINER	SHIPPING WEIGHT	PART NUMBER
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<b>5-Gallon Pails</b> (19 litres)	45 lb. (20.5 kg)	1130-1340-6
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<b>55-Gallon Drums</b> (208 litres)	491 lb. (223.2 kg)	1130-1481-6
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<b>275-Gallon IBC Reusable Tote Tank</b> (1041 litres)	2490 lb. (1131.8 kg)	1130-1725-6
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<b>Bulk</b>	8.51 lb./gal.(1.02 kg/l)	1130-1001-6
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Palletizing of pails and drums is available upon request.

**SHIPPING CUBE**

5-Gallon Pail .....	1.13 cu. ft. (0.032 cu. m)
55-Gallon Drum .....	11.51 cu. ft. (0.326 cu. m)
275-Gallon IBC Tote Tank .....	51.11 cu. ft. (1.1061 cu. m)

This information is only a general guideline. The company reserves the right to change any portion of this information without notice. Terms and conditions of sale apply and are available on request.

07/01 (Rev B) Printed in USA (NFC430-UCG6.PMD)

**NATIONAL FOAM, INC.**

P.O. Box 695 • Exton, PA 19341-0695 • (610) 363-1400 • Fax: (610) 524-9073

www.Kidde-Fire.com